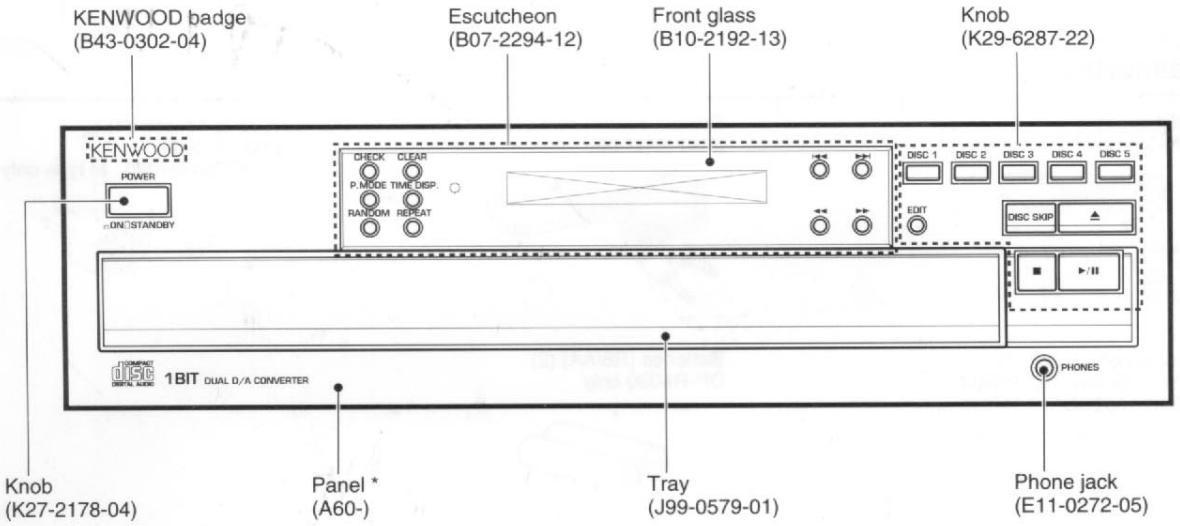
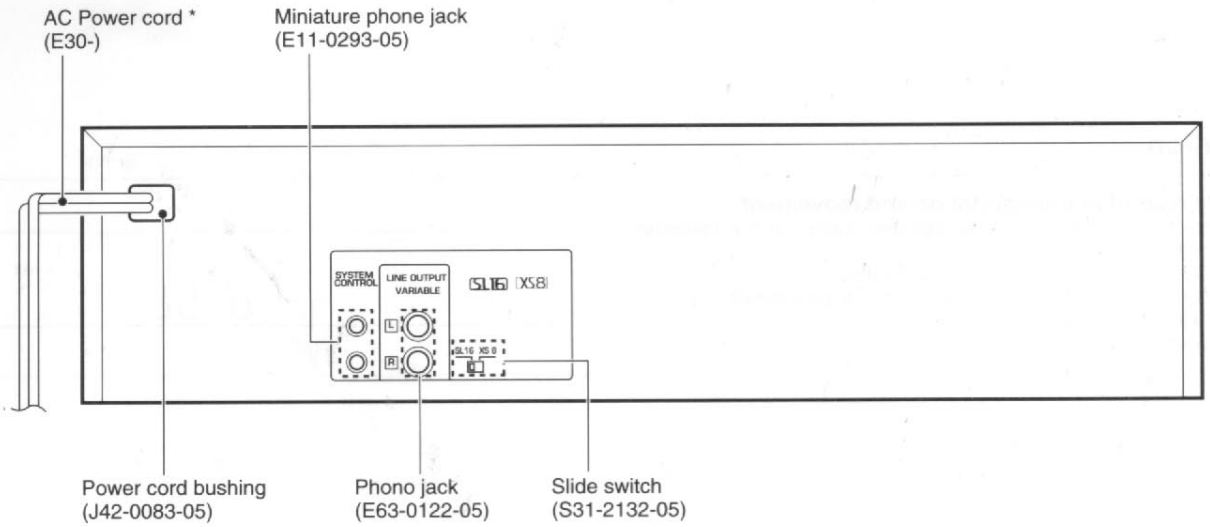
MULTIPLE CD PLAYER

103CD/104CD/1050CD
DP-R797/R3090/R4090
SERVICE MANUAL

KENWOOD





In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

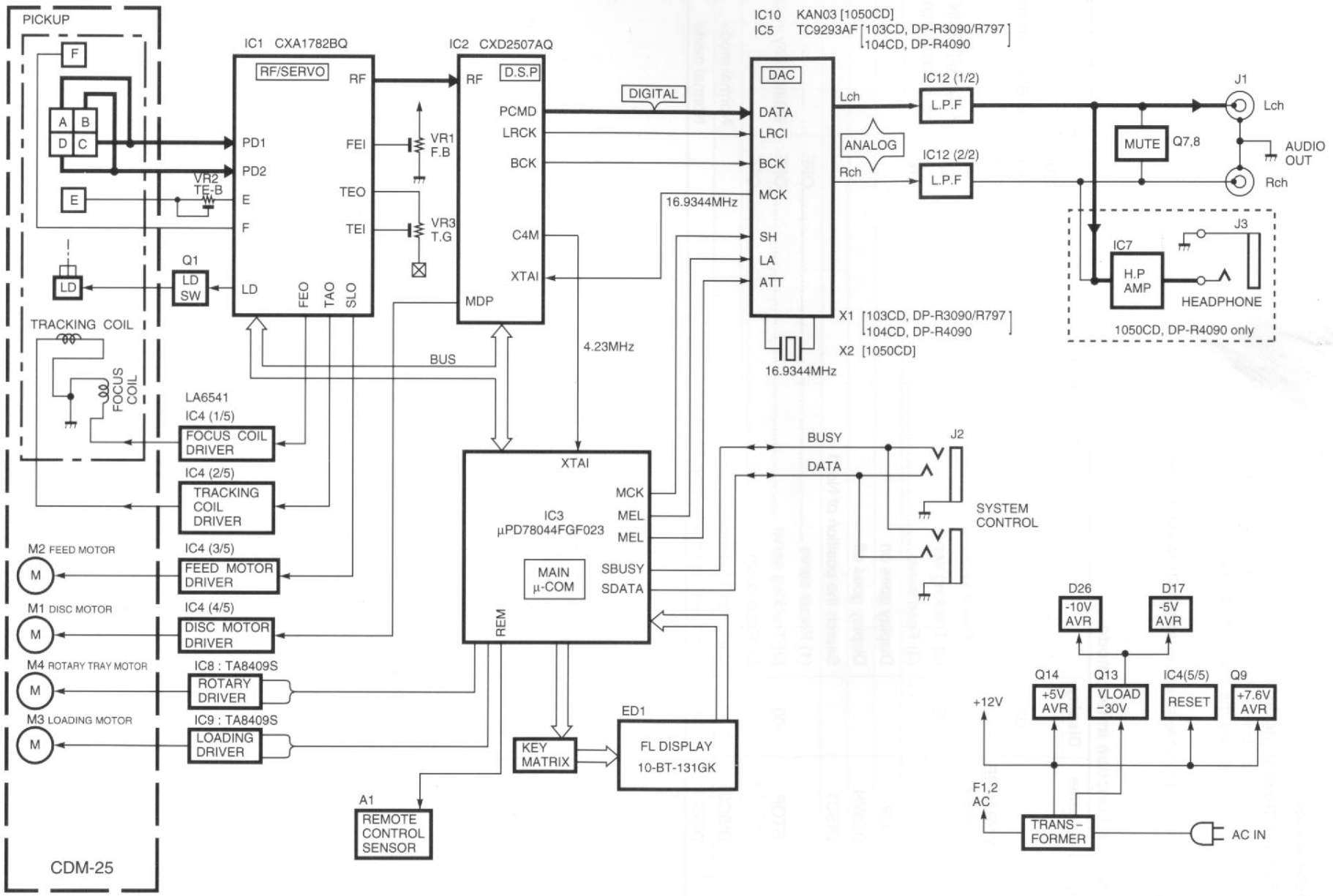
KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.

Illust is DP-R4090.

*** Refer to parts list on page 19.**

103CD/104CD/1050CD/DP-R797/R3090/R4090
BLOCK DIAGRAM

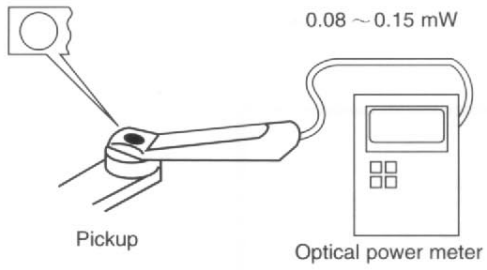


ADJUSTMENT

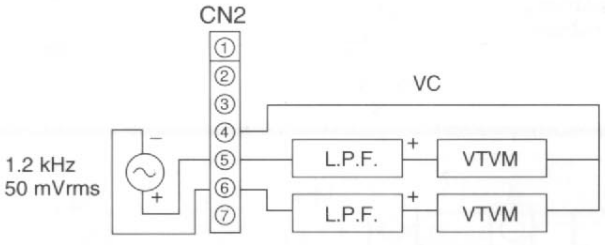
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Open the tray (Normal mode), then turn the power off.							
1	LASER POWER	–	Apply the sensor section of optical power meter on the pickup lens.	While pressing the TIME DISP. key, turn the AC ON. (Test mode) Press the PLAY/PAUSE key, then confirm that the display is "03".	–	On the power from 0.08 to 0.15 mW, when the diffraction grating is correctly aligned with the RF level of 1.0 Vp-p or more.	(a)
1. Press the STOP key. 2. Press the OPEN key. 3. Load a disc, then press the CLOSE key. 4. Press the PLAY key. 5. Press the OPEN key to open the tray. 6. Turn the power off. (Player stops as the tray is opened while the disc clamped.) 7. While pressing the TIME DISP. key, turn the power ON to enter the Test mode.							
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "03".	TE BALANCE VR2	Symmetry between upper and lower patterns	(c)
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF (CN2 pin 1) CH2 : TE1 (CN2 pin 6)	Press the PLAY/PAUSE key, then confirm that the display is "05".	FE BALANCE VR1	Optimum eye pattern	(b) or (d)
4	TRACKING GAIN	Test disc Type 4 Apply signal of 1.2 kHz, 50mVrms to CN2 pin 5-6.	Connect a LPF to CN2 pin 5-6 to which you connect an oscilloscope or AC voltmeters.	Press the PLAY/PAUSE key, then confirm that the display is "05".	TRACKING GAIN VR3	Two VTVMs should read the same value.	(e)

Note:
Type 4 disc : SONY YEDS-18 Test Disc or equivalent.
LPF: Around 47 kΩ+ 390 pF or so.
Step 1~4 are in Test Mode.

(a) Laser power



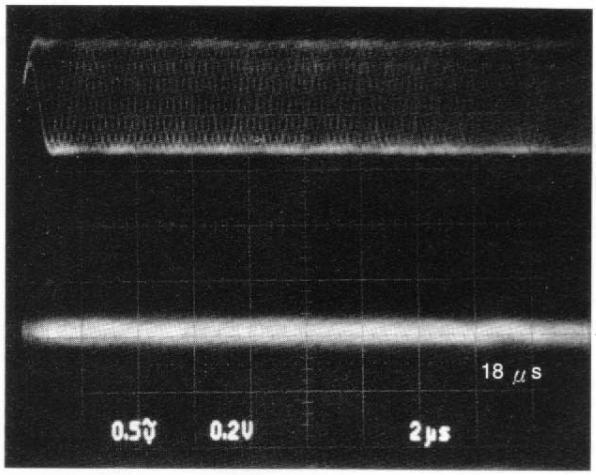
(e) Tracking gain



ADJUSTMENT

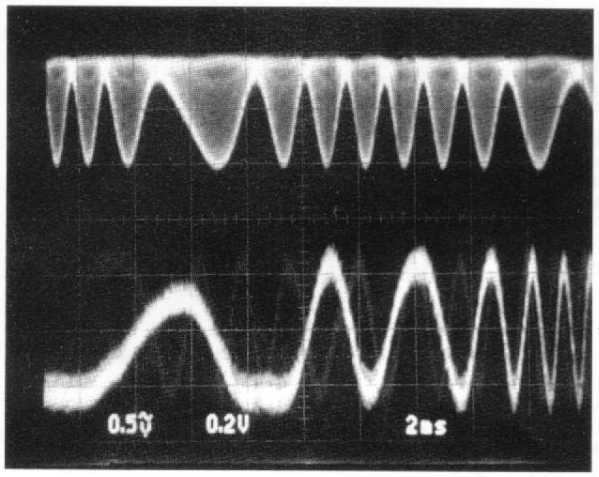
FIG.
(a)
(c)
(b) or (d)
(e)

FIG. (b)



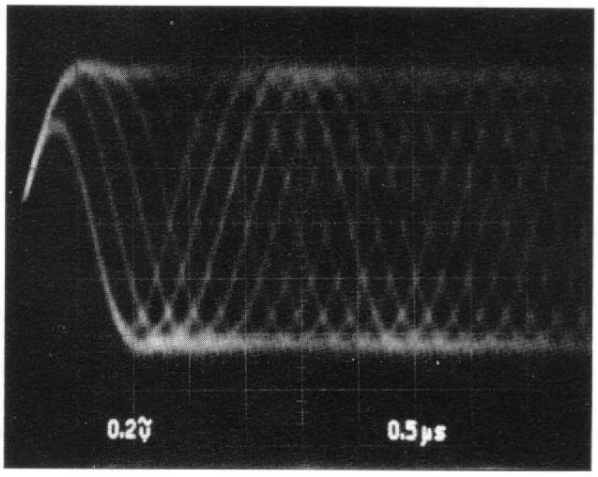
- RF signal and TE signal in test mode (PLAY).
- If the diffraction grating has been adjusted correctly, the influence of triggering is observed on the TE waveform of approx. 18 μs from RF signal trigger point, in the form of a projection.

FIG. (c)



- RF signal and TE signal in test mode (Focusing servo ON / Tracking servo OFF). (Disc Type 4)
- Adjust TE signal so that the waveform is symmetrical in relation to VC. (TE BALANCE)

FIG. (d)



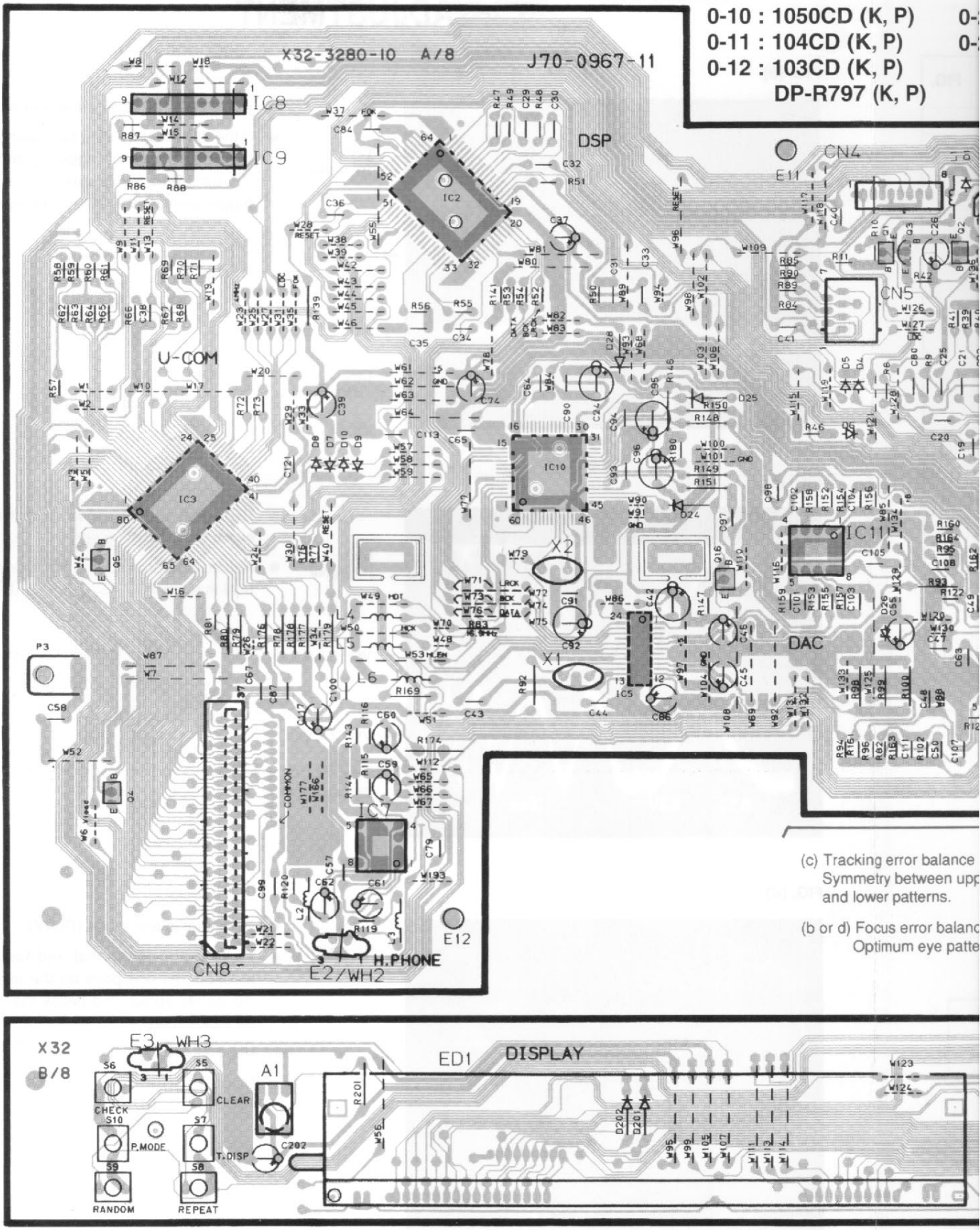
- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be looked clearly.

  (FE BALANCE)

PC BOARD(Component side view)

CD player unit
X32-328X-XX

0-10 : 1050CD (K, P)
0-11 : 104CD (K, P)
0-12 : 103CD (K, P)
DP-R797 (K, P)



(c) Tracking error balance
Symmetry between upp
and lower patterns.

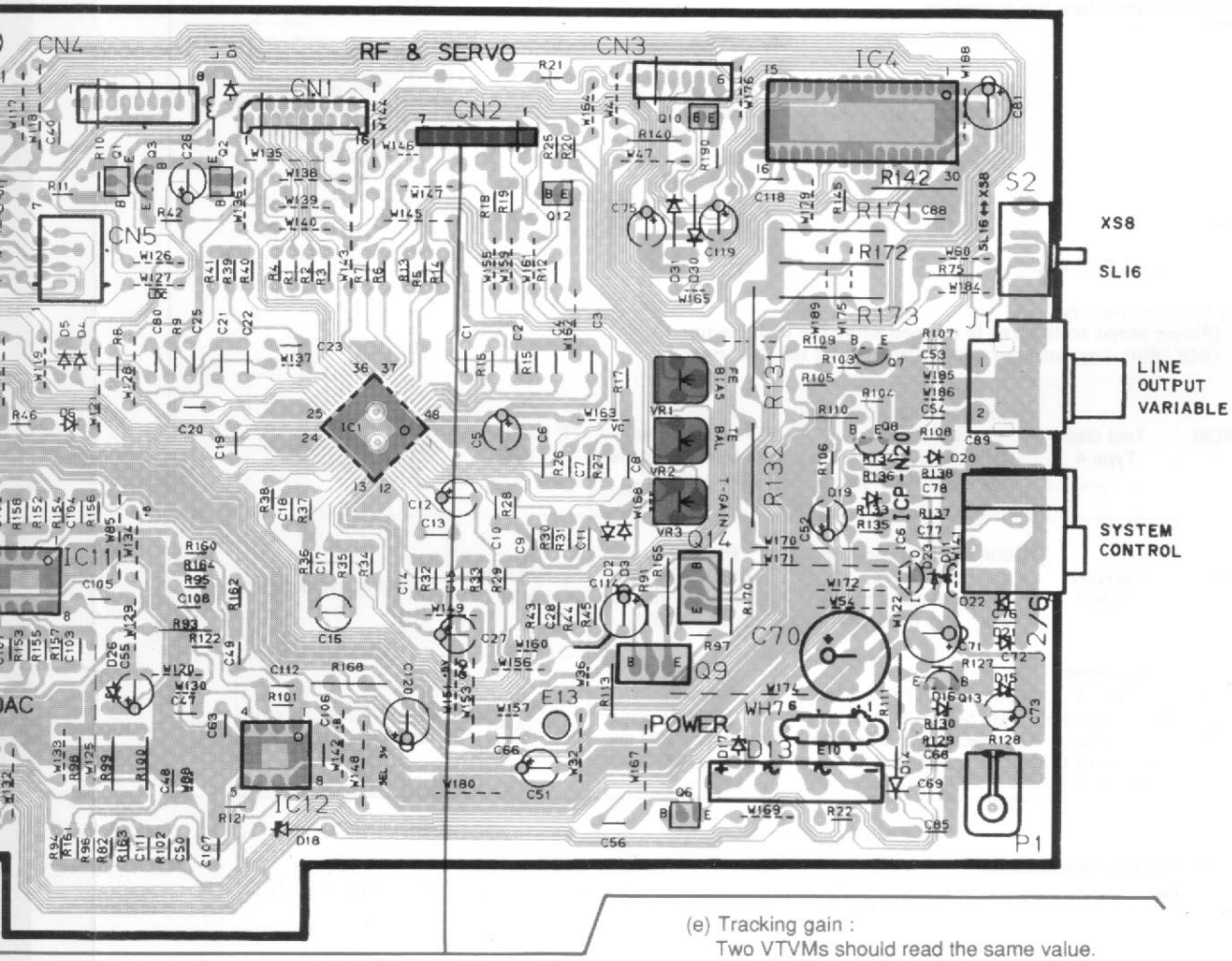
(b or d) Focus error balanc
Optimum eye patte

50CD (K, P)
04CD (K, P)
03CD (K, P)
P-R797 (K, P)

0-21 : 1050CD (Y)
0-22 : DP-R4090 (M)
104CD (Y)

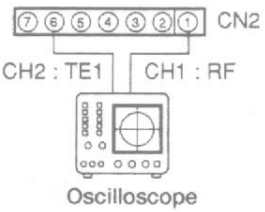
0-23 : DP-R3090 (M)
103CD (Y)
DP-R797 (Y)

2-71 : DP-R4090 (E, T, X)
2-72 : DP-R3090 (E, T, X)

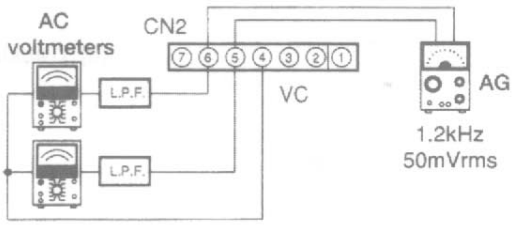


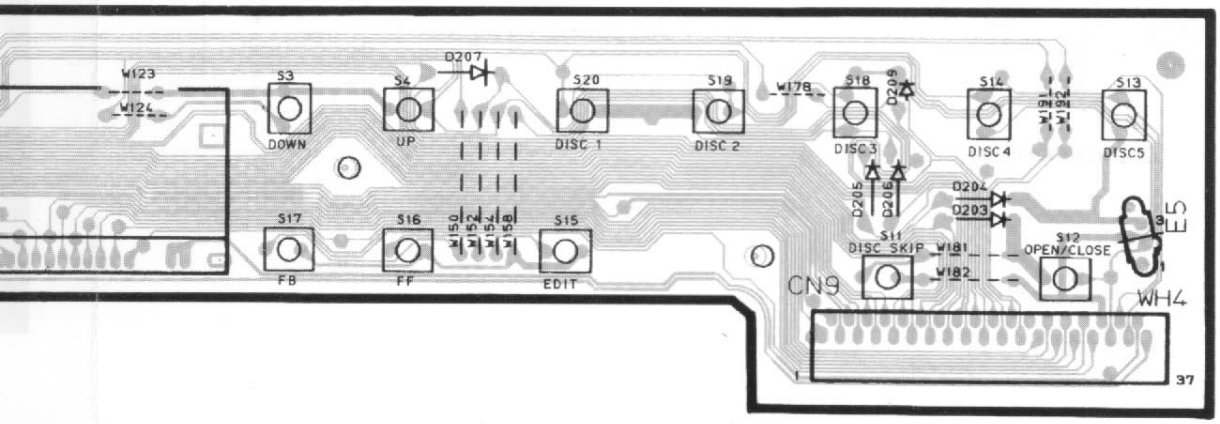
(c) Tracking error balance :
Symmetry between upper and lower patterns.

(b or d) Focus error balance :
Optimum eye pattern.



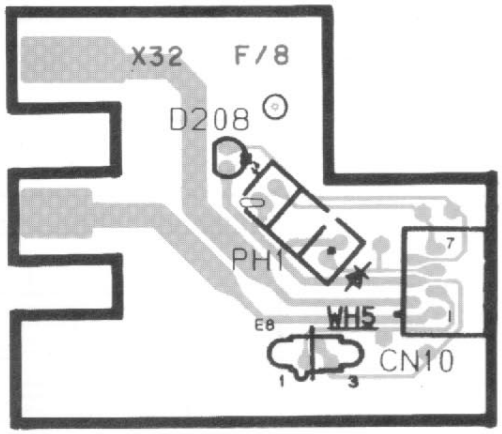
(e) Tracking gain :
Two VTVMs should read the same value.

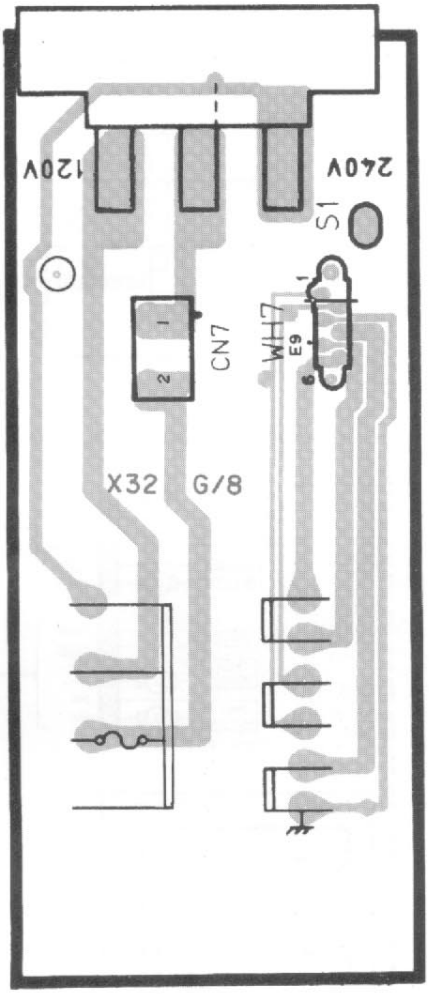


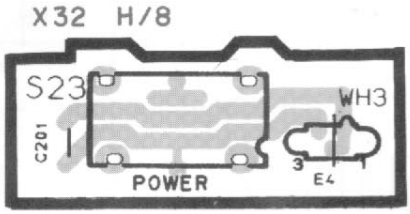


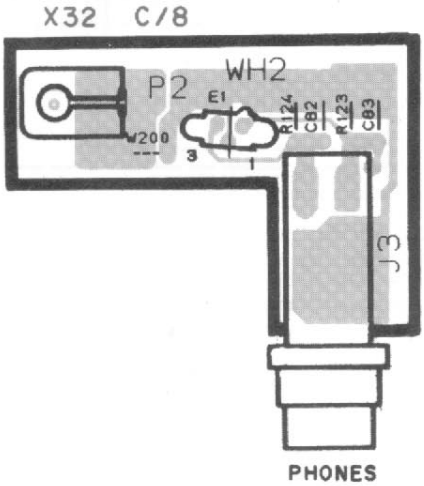
Refer to the schematic diagram for the value of resistors and capacitors.

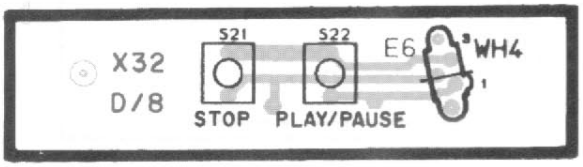
PC BOARD(Component side view)



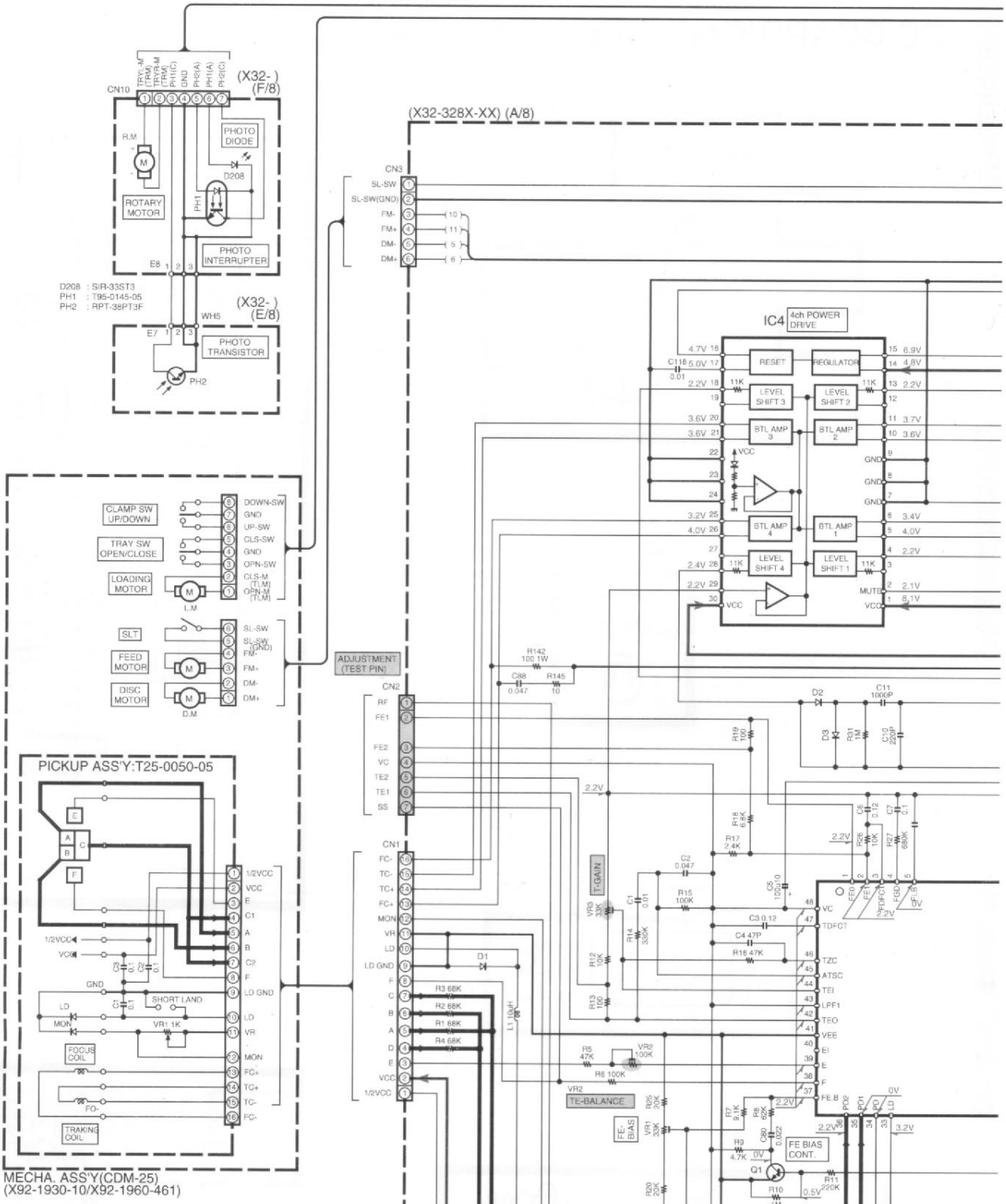








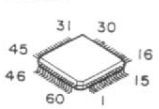
Refer to the schematic diagram for the value of resistors and capacitors.



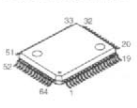
CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.*

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage dur ing PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

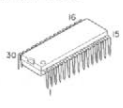
KAN03



CXD2507AQ*1

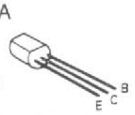


LA6541D



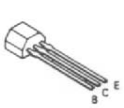
F G H I J

2SA1534A
2SA954
2SA992
2SC2878

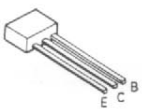


2SC2785

DTA124ESA
DTC124ESA
UN4112
2SC1740S



UN4212
UN4219



2SD2012

NJM4565D

TA84

J K L M N O

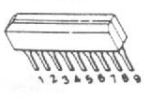
1050CD
X32-328X-XX

DESTINATION		UNIT No.	A	B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
COUNTRY	ABB.															
U.S.A. CANADA	K P	0-10	YES	NO	YES	uPD78044FGF043	NO	YES	UZ-3.9BSB or MTZJ3.9(B)	NO	NO	180	YES	YES	NO	YES
PX	Y	0-21				uPD78044FGF023 or uPD78044FGF043	YES			YES				NO		NO

104CD
X32-328X-XX

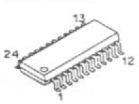
DESTINATION		UNIT No.	A	B	C	IC3	IC6	D11
COUNTRY	ABB.							
U.S.A. CANADA	K P	0-11	NO	YES	YES	uPD78044FGF023 or uPD78044FGF043	NO	NO
PX GENERAL MARKET	Y M	0-22					YES	
AUSTRALIA U.K. EUROPE	X T E	2-71						

TA8409S

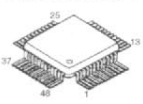


NJM4580D

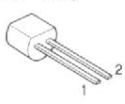
TC9293AF



CXA1782BQ*1



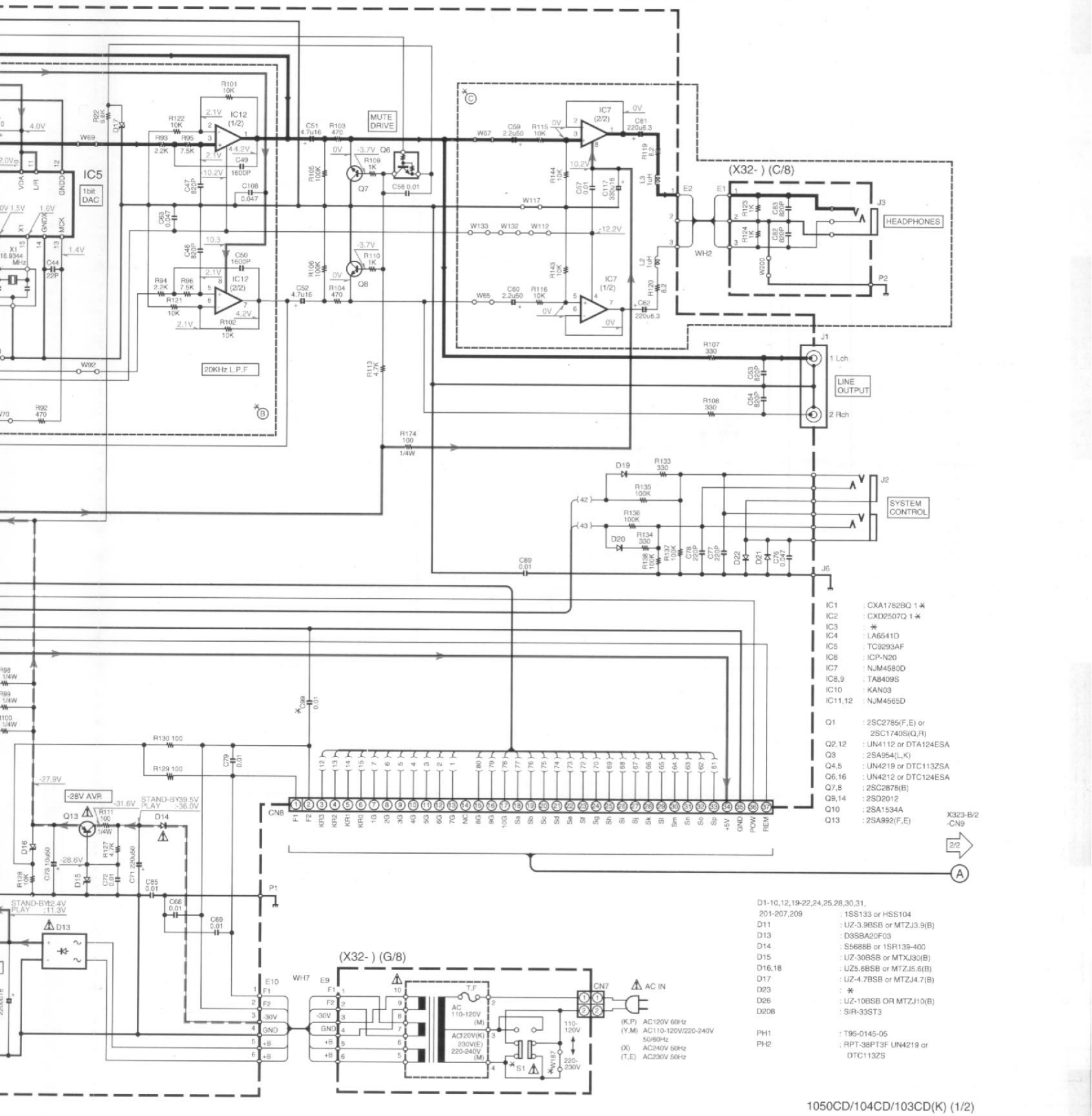
ICP-N20



B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
			NO			NO				YES		YES
YES	YES	uPD78044FGF023 or uPD78044FGF043	YES	NO	UZ-8.2BSB or MTZJ8.2(B)	YES	YES	470	YES	NO	YES	NO
						NO						YES

103CD
X32-328X-XX

DESTINATION		UNIT	A	B	C	IC3	IC6	D11	D23	S1	C99	R91, 97	E12	W122	W141	W187
COUNTRY	ABB.	No.														
U.S.A.	K						NO			NO				YES		YES
CANADA	P	0-12								YES						NO
PX GENERAL MARKET	Y	0-23	NO	YES	NO	uPD78044FGF023 or uPD78044FGF043	YES	NO	UZ-8.2BSB or MTZJ8.2(B)		YES	470	NO	NO	YES	
	M															YES
AUSTRALIA	X	0-23								NO						
U.K.	T	2-72														
EUROPE	E															



IC1	: CXA1782BQ 1 ✳
IC2	: CXD2507Q 1 ✳
IC3	: ✳
IC4	: LA6541D
IC5	: TC9293AF
IC6	: ICP-N20
IC7	: NJM4580D
IC8,9	: TA8409S
IC10	: KAN03
IC11,12	: NJM4565D
Q1	: 2SC2785(F,E) or 2SC1740S(Q,R)
Q2,12	: UN4112 or DTA124ESA
Q3	: 2SA954(L,K)
Q4,5	: UN4219 or DTC113ZSA
Q6,16	: UN4212 or DTC124ESA
Q7,8	: 2SC2878(B)
Q9,14	: 2SD2012
Q10	: 2SA1534A
Q13	: 2SA992(F,E)

D1-10,12,19-22,24,25,28,30,31, 201-207,209	: 1SS133 or HSS104
D11	: UZ-3.9BSB or MTZJ3.9(B)
D13	: D3SBA20F03
D14	: S5688B or 1SR139-400
D15	: UZ-30BSB or MTXJ30(B)
D16,18	: UZ5.6BSB or MTZJ5.6(B)
D17	: UZ-4.7BSB or MTZJ4.7(B)
D23	: ✳
D26	: UZ-10BSB OR MTZJ10(B)
D208	: SIR-33ST3
PH1	: T95-0145-05
PH2	: RPT-38PT3F UN4219 or DTC113ZS

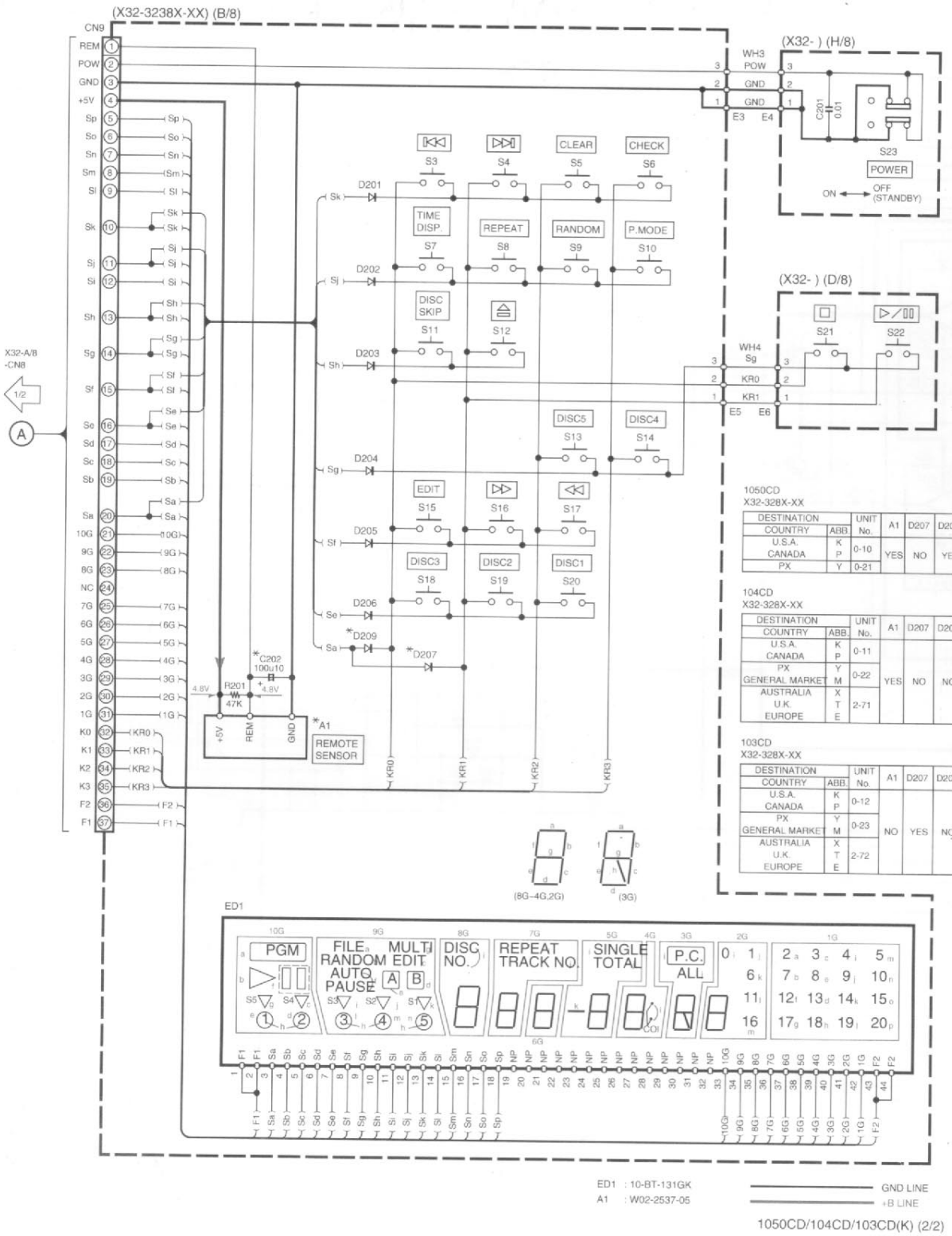
(K,P) AC120V 60Hz
(Y,M) AC110-120V/220-240V 50/60Hz
(X) AC240V 50Hz
(T,E) AC230V 50Hz

1050CD/104CD/103CD(K) (1/2)

103CD/104CD/1050CD/DP-R797/R3090/R4090

Y22-4870-10

KENWOOD



1050CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-10	YES	NO	YES	YES
CANADA	P					
PX	Y	0-21				

104CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-11	YES	NO	NO	YES
CANADA	P					
PX	Y	0-22				
GENERAL MARKET	M					
AUSTRALIA	X	2-71				
U.K.	T					
EUROPE	E					

103CD
X32-328X-XX

DESTINATION		UNIT	A1	D207	D209	C202
COUNTRY	ABB.	No.				
U.S.A.	K	0-12	NO	YES	NO	NO
CANADA	P					
PX	Y	0-23				
GENERAL MARKET	M					
AUSTRALIA	X	2-72				
U.K.	T					
EUROPE	E					

1050CD/104CD/103CD(K) (2/2)

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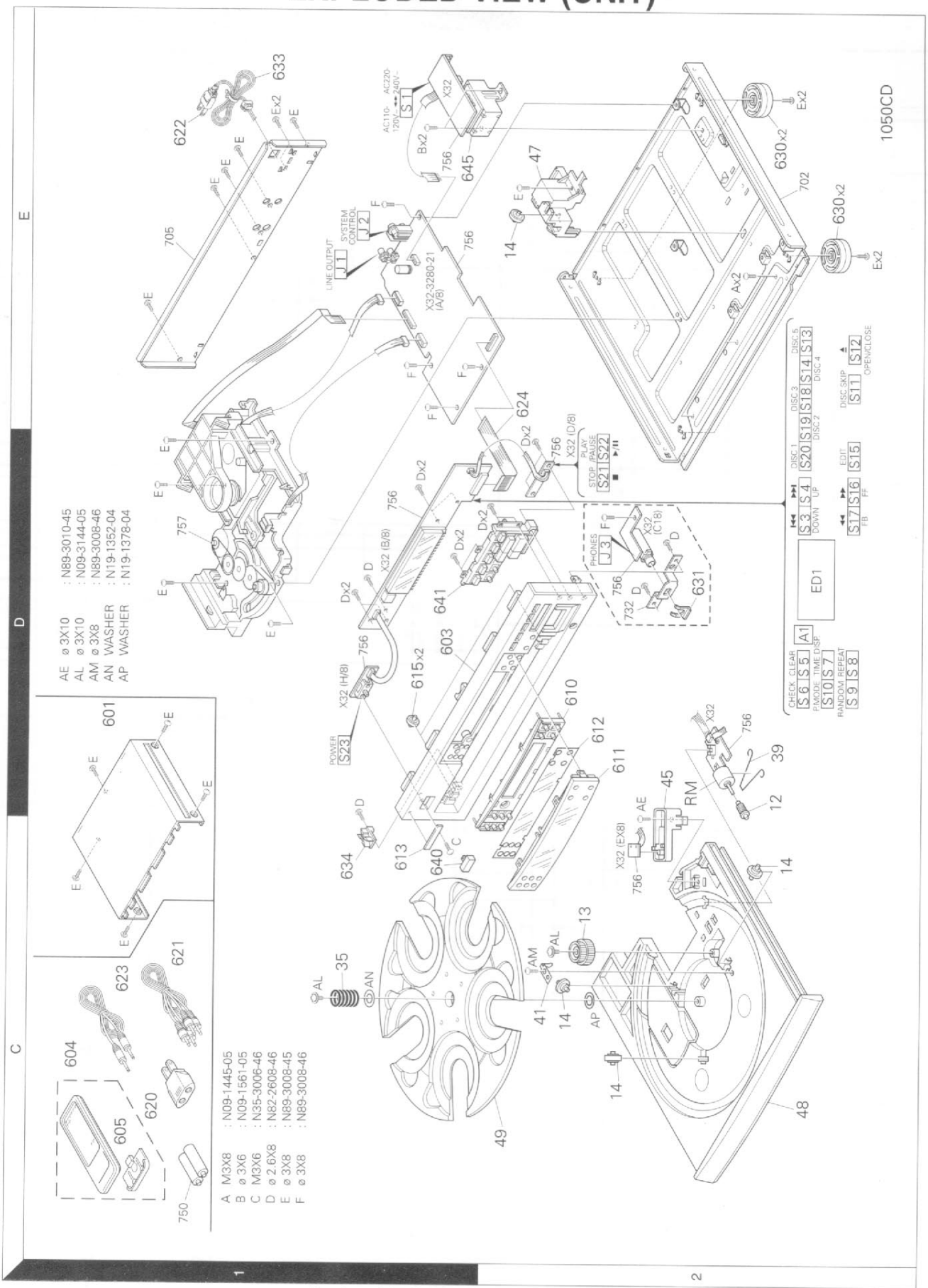
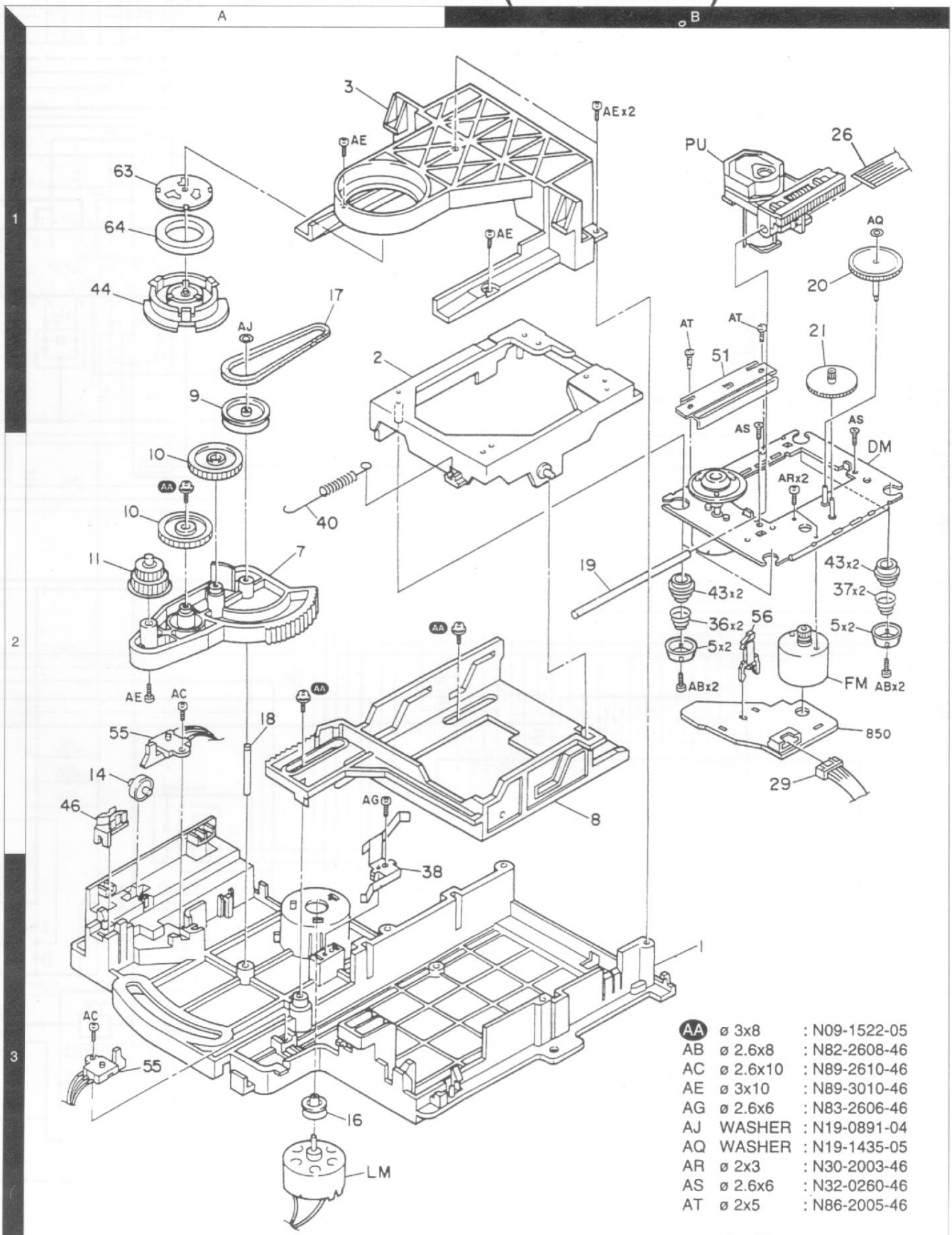
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage dur ing PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP.

EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (MECHANISM)



AA	ø 3x8	: N09-1522-05
AB	ø 2.6x8	: N82-2608-46
AC	ø 2.6x10	: N89-2610-46
AE	ø 3x10	: N89-3010-46
AG	ø 2.6x6	: N83-2606-46
AJ	WASHER	: N19-0891-04
AQ	WASHER	: N19-1435-05
AR	ø 2x3	: N30-2003-46
AS	ø 2.6x6	: N32-0260-46
AT	ø 2x5	: N86-2005-46

CDM-25

Parts with the exploded numbers larger than 700 are not supplied.

103CD/104CD/1050CD/DP-R797/R3090/R4090

SPECIFICATIONS

[Format]

System .....Compact disc digital audio system
Laser .....Semiconductor laser

[D/A Convertors]

D/A Conversion 1Bit
Oversampling .....8 fs (352.8 kHz)

[Audio]

Frequency response.....4 Hz ~ 20 kHz, ± 0.5 dB
Signal to noise ratio.....More than 95 dB
Dynamic range .....More than 95 dB
Total harmonic distortion +noise
.....Less than 0.008 % (at 1 kHz)
Wow & flutter .....Unmeasurable Limit
Output level / impedance
Fixed (DP-R3090) .....2.0 V / 0.8 kΩ
Variable (DP-R4090).....(max.) 2.0 V / 0.8 kΩ
Headphone output (max.)
(DP-R4090 only) .....20 mW (32 Ω)

[General]

Power consumption.....13 W
Dimensions.....W : 440 mm (17-5/16")
H : 125 mm (4-15/16")
D : 397 mm (15-5/8")
Weight (Net) .....5.0 kg (11.0 lb)

Note :
We follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:
Component and circuity are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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